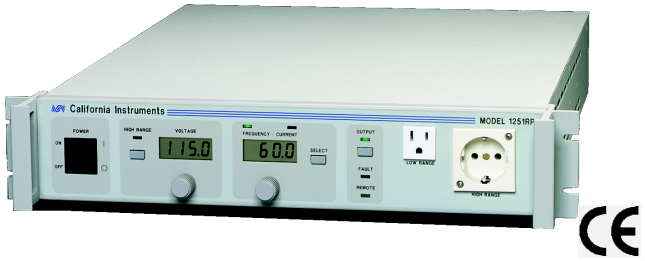
Program AC Power Worldwide
RP Series

Value / Power

- **Programmable Power, Low Cost**
  Cost effective solution for wide range of AC power tests
- **800 VA or 1250 VA Output Power**
  Capable of handling most single phase applications
- **Front and Rear Outputs**
  Connect load to front panel outlets or rear panel terminal block for maximum convenience
- **16 Hz to 500 Hz Frequency Range**
  Utility and Avionics applications
- **High Peak Current Capability**
  Drives a wide variety of non-linear loads
- **Remote Control Option**
  IEEE-488 and RS232C Interface for automated test applications



Compact AC Power

Affordable AC Power Solutions

With European and US outlet sockets to connect the load, the 801RP and 1251RP programmable AC power sources are ideal for a wide variety of applications.

Universal, Power Factor Corrected (PFC) input allows these products to be used anywhere in the world to provide a convenient source of variable utility power for the testing and evaluation of domestic and commercial equipment. All common line voltage and frequency combinations are covered.

In addition, the frequency range covers 500 Hz, making these products ideal for commercial and defense avionics applications.

A built in current measurement function eliminates the need for an external current shunt or transformer. Load current of the UUT (Unit Under Test) can be read directly on the large LCD display to 0.1 A. For additional protection, a current limit function can be set from zero to the maximum current rating.

Easy To Use Controls

Front panel digital rotary encoders are used to set voltage and frequency. These controls have an analog feel, with the precision and reliability of digital circuits. Settings are read directly on the large high contrast LCD displays.

Dual output voltage ranges of 135 Vrms L-N and 270 Vrms L-N, provide maximum current at the required voltage.

The output frequency can be varied from 16 Hz up to 500 Hz to cover both avionics and utility power applications.

IEC 1000-3-2 Test Applications

The low total harmonic distortion of the output makes the 801RP and 1251RP suitable AC sources for IEC 1000-3-2 Current Harmonics pre compliance testing. Loads requiring up to 4.6 Arms at 230 Vrms with peak currents up to 12 A can be tested with the 1251RP while the 801RP can supply up to 3.0 Arms. This covers many loads that fall under the IEC standard.

Quality Control

For product quality test applications, the 801RP and 1251RP can be used to simulate line conditions found anywhere in the world. This ensures products destined for export will operate as designed.

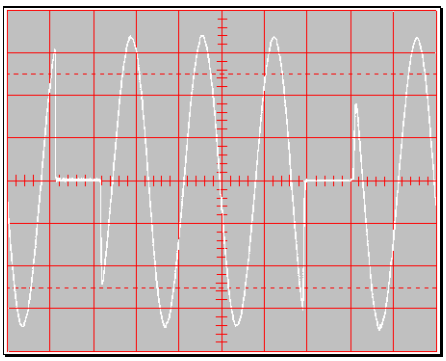
Avionics Applications

As an affordable and reliable source of 400 Hz AC power, both units are well suited for commercial and defense avionics applications. Both unit can easily be integrated into avionics ATE systems.

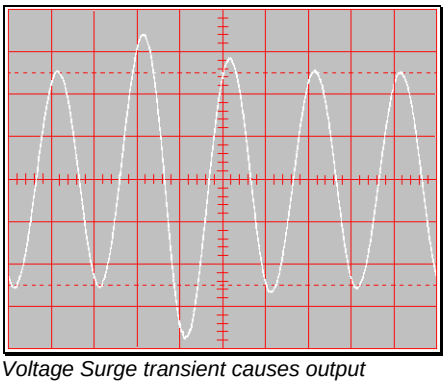
Functional Design

The small form factor and low weight of these units make them convenient to use in a variety of locations. Removable rubber feet protect the work surface if the unit is used in a bench top mode. The 3.5 inch height saves valuable rack space when compared to conventional AC power sources at this power level.

RP Series- For Easy Transient Programming

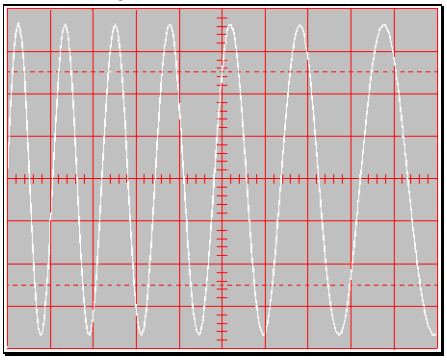


Drop transient causes output voltage to drop to zero for a user specified period. Sub cycle dropouts can be simulated without problem due to the DC coupled output stage of the 801RP and 1251RP

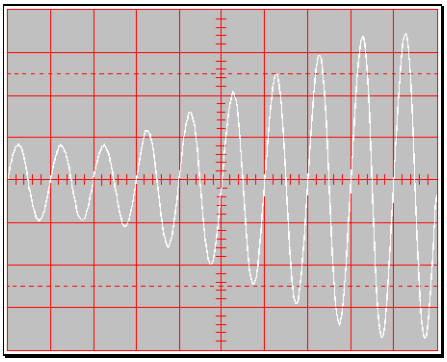


Voltage Surge transient causes output voltage to surge

- Adjust current limit value



Frequency Sweep transient causes the output frequency to change at a user specified rate.



Voltage Sweep transient causes output voltage to change at a programmed rate.

Extensive Transient Control[1]

With the addition of the remote control interface option, RP Series units are capable of producing transients with a high degree of user programmability. Setting up transient programs is facilitated by a Windows Graphical User Interface program that allows amplitude, frequency and event duration to be programmed from a PC. Time resolution is 1 ms (0.001 sec) with a minimum time interval ranging from 10 to 40 ms, depending on the transient type. Transient programming allows the effects of common line disturbances such as voltage surges, sags, drop-outs and frequency fluctuations on the unit under test to be evaluated.

Remote or Local Operation

For automated test equipment (ATE) applications, the RP Series units can be outfitted with both IEEE-488 and RS232C using the -IF option. A front panel lock out mode is supported on both models if operator interaction with the AC source is not required or desired.

SCPI Protocol Programming Commands

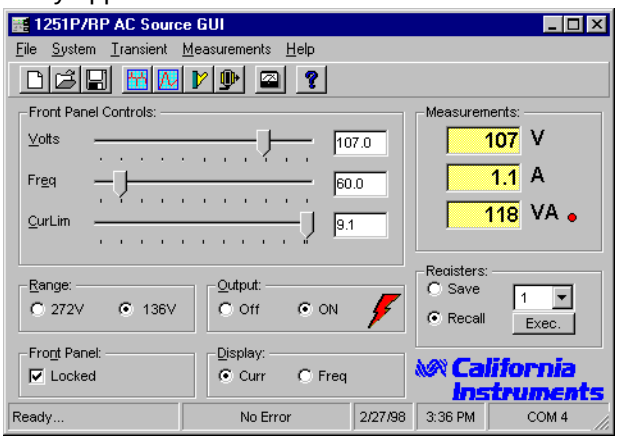
All functions of the 801RP and 1251RP are completely programmable over the IEEE-488 or RS232C bus. For example, the following tasks can be performed over the bus:

- Set voltage to any level
- Change frequency
- Generate 10 ms or longer voltage dropouts
- Measure rms current, voltage and apparent power
- Recall eight complete instrument setups from non-volatile memory with a single SCPI command
- Reset the instrument

- Lock the front panel to prevent operator interference
- Switch between high and low voltage range
- Turn output on and off

Application Software

Windows 3.1™ or Windows 95™ application software is included with the remote control interface option. This easy to use graphical interface program provides complete control over all instrument functions using either the RS232C or IEEE-488 interface. With enhanced capabilities such as data logging to file and Dynamic Data Exchange to other Windows programs, many applications can be addressed without the need for writing custom code.



Free Windows™ Graphical User Interface software included with interface option

[1] Note: Transient control does not apply to output phase angle

Specifications

California Instruments

Total Customer Satisfaction is the goal of all California Instruments' employees. It is the driving force behind everything we do. This not only affects the product that you purchase from California Instruments, but everything about your interface with the company. Our applications engineers are ready to assist you with your AC power application. With over 35 years of experience designing and building precision AC power supplies, chances are we can meet your needs and exceed your expectations. The same dedication to customer satisfaction you will find in our applications group also permeates our modern manufacturing facility where our products are carefully built. No unit leaves our factory without being thoroughly tested to ensure quality, reliability and conformance to specifications.

CE Mark

The 801RP and 1251RP have been fully tested for compliance with 1997 CE Mark requirements. This allows both AC power sources to be used in the European Economic Community.

Parameter			801RP	1251RP	Unit
Controller					
Type			Programmable		
Controls			Digital Encoders		
Readout		Voltage	4 digit LCD		
		Freq. / Current	4 digit LCD		
Non Volatile Setups (with -IF option)			8		
Output					
AC Power			800	1250	VA
Voltage					
High range			0 - 270		V (L-N)
Low range			0 - 135		V (L-N)
Accuracy		@ 50/60 Hz	± 1		% FS
		@ 400 Hz	± 2		% FS
Resolution			0.1		V
Line & Load Regulation		High V range	± 0.5		% FS
(combined)		Low V range	± 1		% FS
T.H.D.		@ 50/60 Hz	0.5 typical		%
Output Noise			< 0.1 typical		V
Frequency		(specifications valid from 45 Hz to 500 Hz)			
Range			16 - 500		Hz
Accuracy			± 0.02		%
Resolution		below 100 Hz	0.1		Hz
		above 100 Hz	1		Hz
Current					
Steady State Current		High V range	3.0	4.6	A rms
		Low V range	6.0	9.2	A rms
Peak Current		High V range	13.8	13.8	A peak
(shorted output)		Low V range	27.6	27.6	A peak
Protection					
Current limit		Mode	Programmable		
(Output shut off)		Resolution	0.1		A rms
Over Temperature			√		
Over Voltage			√		
Input					
Line Voltage[1]	Nominal	2 wire + GND	100 -240		V rms
	Maximum operating range		85 - 265		V rms
Line Current (fused)			< 15		A rms
Line Frequency			47 - 63		Hz
Holdup Time			20		ms
Power Factor			> 0.95 typical		
Isolation		Input to Chassis	1350		V
		Input to Output	2200		V
Measurements					
Current		Range	0.0 - 10.0		A rms
		Accuracy	± 0.2		A rms
		Resolution	0.1		A
Voltage		Range	0 - 278		V
		Resolution	1 (below 250 V)		V
Remote Control Option					
Interface types		option -IF	RS232C IEEE-488		
IEEE-488 Address			0 - 31		
IEEE Functions			SH1, AH1, T6, L3, RL2		
RS232C settings			9600,8,n,1		
Command Language			SCPI		
Physical					
Regulatory			CE		
Dimensions		HxWxD	3.5 x 16.8 x 22		inches
		HxWxD	89 x 427 x 560		mm
Weight (net)			34 / 15.4		lbs / kg
Vibration and Shock			Designed to meet NSTA-1A		
Temperature		Operating	0 to 40		° C
		Storage	- 40 to + 85		° C

[1] 120 Vrms minimum line input required for full 1250 VA output on model 1251RP.
Note: Specifications shown are valid over an ambient temperature range of 25°±5°C.

Ordering Information

Remote Control Option

The RP Series can be ordered with a combined RS232C and IEEE-488 remote control interface option. A Windows 3.1™ Graphical User Interface (GUI) program is included with either option for PC control applications.

Ordering Information

Models:

801RP	800 VA rack-mount AC source
1251RP	1250 VA rack-mount AC Source

Options

-IF	IEEE-488 and RS232C Interface
-ISS	International Socket Strip
-ISR	Rack mounted ISS
-L22	Locking knobs
-RI	Remote Inhibit Input
-RMS	Rack Slides (P/N 210367)

Line Cord Options:

Country	Order
Continental Europe	PC1
Australia / New Zealand	PC2
UK / Ireland etc.	PC3
Denmark	PC4
India	PC5
Israel	PC6
Italy	PC7
North America*	PC8
Switzerland	PC9
Japan	PC10

* One North American Line cord is included. Optional line cords are straight, adding about 1 inch of depth to unit.

Supplied with:

- North American Line Power Cord
- USA and European line output mating connector
- Instruction Manual
- Windows™ Graphical User Interface and RS232C cable (with -IF option)

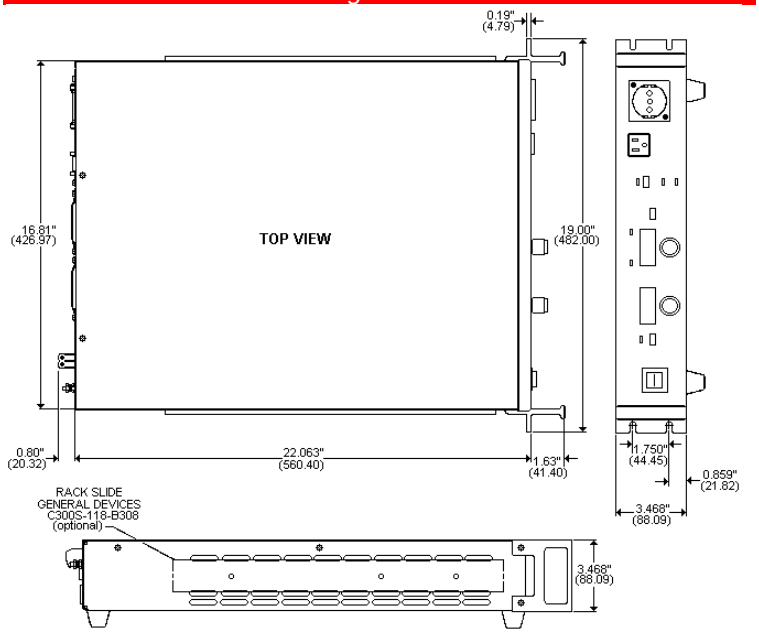
Portable AC Sources

For mobile or bench top applications, 1000 VA portable AC power sources are available as well. The 1001P offers similar capabilities as the 801RP at an increased power level. For applications that only require fixed voltage and frequency settings, the 1001WP frequency converter provides push button selection of nominal 50 or 60 Hz and 100V, 115V, 220V, 230V and 240 V settings. Refer to P and WP Series data sheet for details.

Customer Support

For technical support and service, or to discuss your AC power application needs, contact California Instruments Corp. or your local representative.

RP Series *Dimension drawing*



Ordering Information

Terms: Net 30 days on approved credit
F.O.B: Factory San Diego, CA
Shipment: Freight collect.

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